DIRECT FUEL INJECTION ENGINE

ABSTRACT OF THE DISCLOSURE

An direct fuel injection spark ignition internal combustion engine comprises a fuel injection valve arranged at a substantially center part of an upper are of a combustion chamber, and a piston having a crown surface with a cavity shaped so that a center axis of a substantially conical-shaped fuel stream injected from the fuel injection valve is substantially coincident with a center axis of the piston. In a low-load stratified combustion operating region when spark ignition is executed, the fuel injection angle is increased to form a first combustible air-fuel mixture before the fuel stream collides against the cavity of the piston crown surface. In a high-load stratified combustion operating region, the fuel injection angle is reduced to form a second combustible air-fuel mixture after the fuel stream collides against the cavity of the piston crown surface.